UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/782,495	02/13/2001	Lorraine M. Herger	YOR920000505US1(13841)	9923

			EXAMINER
7590	03/30/2004		BATAILLE, PIERRE MICHE

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ART UNIT	PAPER NUMBER
2186	H

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.		Applicant(s)
	09/782,495		HERGER ET AL.
Office Action Summary	Examiner		Art Unit
	Pierre-Michel Bataille		2186

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _13 February 2001_.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-28_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-4,6-8,15-19,21-23 and 28_ is/are rejected.

7)☒ Claim(s) _5,9-14,20 and 24-27_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _2_.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This Office Action is taken in conjunction with examination of the instant

application, which presents claims 1-28 for examination.

Specification/Claim Objection

2.   The specification has not been checked to the extent necessary to determine the

presence of all possible minor errors. The following Objections are noted:

Claim 1: "a device for managing real memory" should be changed to --a compressed

main memory control device for managing real memory-- for providing proper

antecedent basis for "the compressed main memory control device for managing real

memory" in claims 2-15.

Claim 3: "said interrupt" lacks antecedent basis in the claims. It appears that the claim

dependency should be changed to claim '2' for proper antecedent basis.

Claim 4: - it appears that "said device driver" should be changed to --said compressed

memory device driver--.

          "said interrupt" lacks antecedent basis in the claims. It appears that the

claim dependency should be changed to claim '5' for proper antecedent basis.

          "said physical memory usage threshold value" lacks antecedent basis in the

claims.

Claim 8: "a user to set a memory usage threshold" should be changed with --said user

to set said memory usage threshold".

Please note that Applicant's cooperation is requested in correcting any errors of which

applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in

section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a

person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived

by the manner in which the invention was made.

4.   Claims 1-4, 6-8, 15-19, 21-23, and 28 are rejected under 35 U.S.C. 103(a) as

being unpatentable over US 6,092,171 (Relph) in view of US 6,564,305 (Moore).

With respect to claims, 1 and 16, Relph teaches a device and method for managing real

memory in a computer system having an operating system and a compressed main

memory defining physical memory and a real memory characterized as an amount of

main memory as been by a processor, and including a compressed memory hardware

controller device for controlling processor access to said compressed main memory

(system including a processing circuit which receives data from the host, a memory device which stores

data and comprises a plurality of storage locations, and a memory management unit for controlling the

storage of data in the memory device) [Abstract; Fig. 3A; Col. 2, Lines 54-63; Col 4, Lines 29-

38], comprising: compressed memory device driver for receiving real memory usage

information from said compressed memory hardware controller, said information

including characterization of said real memory usage state (a compression program for

effecting compressed storage of data in memory) [Col. 2, Lines 63-65; Col. 4, Lines 25-32]:

compression management subsystem for monitoring said memory usage and initiating

memory allocation and memory recovery in accordance with said memory usage state,

said subsystem including mechanism for adjusting usage threshold for controlling

memory state changes (the memory management unit determining when the amount of data stored

in one particular subset of the ordered array of subsets exceeds a predetermined threshold) [Col. 2,

Lines 65-67; Col. 4, Lines 37-42; Col. 7, Lines 60-67]. Relph additionally teaches

memory management unit determining whether the virtual address corresponds to a

physical address without software assistance or additional information [Col. 10, Line 17-

20]; but fails to specify that memory usage in said computer system is transparent to

said operating system. However, Moore teaches compression management in a device

wherein memory usage in said computer system is transparent to said operating system

[abstract; Col. 1, Lines 46-50]. Therefore, it would have been obvious to one having

ordinary skill in the art to come up with the claimed feature because, as taught by

Moore, the implementation of compression at the application level would have

increased the cost of application development and decreased stability of application

execution.

With respect to claims 2 and 17, Relph teaches said controller hardware comprising in

interrupt generator for generating interrupt indicating memory usage exceeding a

physical memory usage threshold, said characterization of said real memory usage

including a memory state set according to an amount of physical memory used (the

compression management responding to the compression signal by generating a compression signal

effecting compressed storage of data within the memory) [Col. 2, Line 65 to Col. 3, Line 3].

With respect to claims 3 and 18, Relph teaches said memory controller including one or

more threshold registers associated with a physical memory usage threshold, said

interrupt being generated when a usage threshold value is exceeded [Col. 8, Lines 48-

67; Col. 5, Lines 29-38].

With respect to claims 4 and 19, Relph teaches said device driver comprising a

mechanism responsive to said interrupt for adjusting said physical memory usage

threshold value in accordance with a current memory usage state [Col. 8, Lines 48-67;

Col. 5, Lines 29-38].

With respect to claim 6 and 21, Relph teaches said compressed memory device driver

comprising a mechanism responsive to said interrupt for broadcasting low physical

memory interrupts to client applications running on said computer system [Col. 8, Lines

48-67].

With respect to claims 15 and 28, Relph teaches managing said real memory usage including memory usage information including memory compression statistics [Col. 8, Lines 48-67].

With respect to claims 7-8 and 22-23, Relph teaches a memory threshold state including <u>one</u> of a steady state warning state and emergency state, said memory threshold programmable by a user, and said device driver including in interface for enabling the user to set a memory usage threshold [Col. 6, Lines 13-34; Col. 8, Lines 48-67].

Allowable Subject Matter

5.   Claims 5, 9-14, 20, and 24-27 are objected to as being dependent upon a

rejected base claim, but would be allowable if rewritten in independent form including all

of the limitations of the base claim and any intervening claims.

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

US 6,000,009 (Brady) teaching method and apparatus for allocation of disk memory

space for compressed data records.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Pierre-Michel Bataille whose telephone number is (703)

305-0134. The examiner can normally be reached on Tue-Fri (7:30A to 6:00P).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matthew M. Kim can be reached on (703) 305-3821. The fax phone number

for the organization where this application or proceeding is assigned is 703-872-9306.
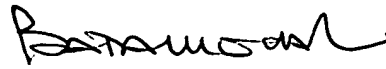
Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Pierre-Michel Bataille
Primary Examiner
Art Unit 2186

March 22, 2004